GEOGRAPHIC NEWS BULLETINS

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Contents for Week of April 18, 1932. Vol. XI. No. 10.

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A HUNGARIAN WILL ROGERS, WITH A DERBY!

Skirtlike trousers and full sleeves do not cramp the style of cowboys of the Hortobagy plain. As a rider and a swinger of the lasso, the herder of the Danube Basin is the equal of the best of Texas and the Argentine. Like our Western cowboy, he often leads a solitary life, but is never really lonely while he has the companionship of a horse (See Bulletin No. 1).

HOW TEACHERS MAY OBTAIN THE BULLETINS

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The Danube, Central Europe's Busiest Trade Artery

ALL Europe is interested in the proposal that five Danube States—Hungary, Austria, Czechoslovakia, Yugoslavia and Rumania—form an economic union, thereby more or less restoring, in a trading sense, the old Austro-Hungarian Empire. Although the Danube River itself is internationalized, the tariff walls along its banks are as high as those along the frontiers of the major powers of Europe. Any nation's ship may carry any cargo it wishes on the Danube's famous "blue" waters—but try to land it! Conferences are planned to level the Danube's "paper levees."

Despite lofty tariff walls, the Danube is Central Europe's busiest trade artery. From the Black Forest to the Black Sea, over a course 1,750 miles in length, the Danube is to the landlocked nations of Europe what the Mediterranean is to the countries of Southern Europe.

Exceeded by Volga in Length

Once the Danube was the northern frontier of the Roman Empire; later it offered an easy path for conquering hordes of Huns, Slavs and Magyars; now it is the commercial Main Street of Central Europe. Although it is exceeded in length by the Volga, the Danube may claim to be the most important river in Europe because it serves an area of more than 320,000 square miles, about equal to Texas and Oklahoma combined, spread over eight countries—Rumania, Poland, Bulgaria, Yugoslavia, Hungary, Austria, Czechoslovakia, and Germany. Its traffic totals 5,000,000 tons annually.

Human activity attains extremes along the Danube's course even more marked than the contrasts along our own Broadway. Its swift-flowing waters see the culture of Vienna and Budapest, and ripple around flat rocks on which Hungarian and Rumanian peasant women pound their clothes with wooden mallets and bear them away in tubs on their heads.

The Danube passes big flour mills like those of Minneapolis, it bears fleet passenger vessels like those on the Hudson, and it also turns the water-wheels of boat-mills to which farmers bring their grain in primitive ox-carts with even the wheels kept in place by wooden pins. Grim, ruined castles, princely estates, charming villages and tiny cottages stand along its banks.

Scenery of Every Variety

Geographically the Danube possesses variety almost as infinite. Rising in the Black Forest, it flows in many arms to Donaueschingen, where it first receives the name of "Danube." Through southern Bavaria it is sometimes pressed between high wooded hills, and at other times it swings in quiet farming valleys. Small craft appear on its waters in this part of Germany.

In Austria the main stream of the Danube splits into several channels and at one place forms a whirlpool. In Hungary's plains, too, it sprawls wide, receiving many branches, remnants of a vast, prehistoric inland sea. In all, the Danube receives nearly as many tributaries as there are days in the year. It resumes its early wild, torrential manner when it pierces the Kazan defile and the Iron Gates.

Below Giurgiu, Rumania, the Danube widens to about three miles from bank to bank. The lower Danube has a very slight fall, only 120 feet in the last 600 miles of its length, but because of the great volume of water, increased as it goes on by lusty Rumanian branches, one of which extends into Poland, it flows

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DAUGHTER LEARNS ABOUT CAKE BAKING FROM AN EXPERT

This Czechoslovak kitchen is typical of those in the villages of central Europe along the Danube. Spotlessly clean, it sometimes serves also as a general living room, a dining room, and perhaps as a place to sleep. The crisp, tasty cake of the region is baked on rollers over an open fire. Some of the finished cakes are cooling on the table at the left (See Bulletin No. 1).

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Explorer Explodes Some Fallacies of Tropic Regions

ERNEST G. HOLT, leader of the National Geographic Society's two expeditions to the jungles of Brazil and Venezuela, exploded some of the fallacies about the South American Tropics.

It does not get as hot in some parts of the Amazon jungle as in some sections of the Atlantic seaboard in the summer time, the explorer declared. The expedition's hottest day was 97½ degrees Fahrenheit, and at night the temperature usually went so low into the seventies that blankets were needed.

Snakes Not so Common as Supposed

Mosquito nets must be used, but not for mosquitoes. While there are mosquitoes in the Amazon Valley, the sand fly is much more troublesome. These tiny pests are everywhere, and if one would sleep, eat or rest in peace one must be inclosed in a veritable tent of netting.

Mr. Holt found that the dread boa constrictor is not so dangerous a snake, nor is the anaconda nearly so long as it is popularly believed to be. In fact, snakes are not as plentiful in the jungles as is commonly supposed. In several thousand miles of travel in the Amazon and Orinoco river basins the expedition captured only twenty-five specimens, and it was hunting for snakes as well as for birds and other wild life.

The mysterious Casiquiare River, one of the queerest streams in the world, was thoroughly explored on Mr. Holt's second expedition, which accompanied a border survey party sent out by the Brazilian and Venezuelan governments. Most headwater streams are parts of one great river system, but the Casiquiare is related to two—the Amazon and the Orinoco. It was long supposed to flow alternately in two directions, but Mr. Holt found that it has only a one-way flow, and that toward the Amazon, whence it carries about a third of the volume of the upper Orinoco's waters.

Fighting the Rapids of the Rio Negro

The expedition reached the Casiquiare River, also called "canal," after a long, hard struggle against the rapids of the Rio Negro, one of the long northern arms of the Amazon. In "bird cage boats" the party proceeded up the island-dotted channel, and thence into tributaries where swift-moving waters more than once endangered the supplies and specimens.

One stretch of the trip, for which five days' gasoline was allowed, took twenty-two days to negotiate, two days of which were consumed in getting around one fall.

By sailing on the Casiquiare from end to end the expedition obtained more facts about this strange stream than have ever been collected before. The "source," if such a term may be used, of the Casiquiare, is an "island" in the Orinoco. Near the town of Tamatama, Venezuela, the main channel of the Orinoco is divided by what would ordinarily be the head of an island.

Instead of passing around this highland and then rejoining the mother stream, as do the countless other arms and channels, about a third of the volume of the Orinoco gets lost on a wide, low plain and wanders over into the territory of the Amazon. There it joins with the Guainia, rising far to the westward in Colombia, to form the Rio Negro.

The Casiquiare had its origin, it is believed, during some time of flood, when

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with great force. The Bulgarian banks are high; the Rumanian shore is low and flat, a region of swampy fens, overgrown with willows and reeds, abounding with wild birds and half-wild swine, and cut in every direction by little streams.

Not as "Blue" as It is Sung

After sprawling in a great angle around the Rumanian province of Dobruja, the so-called blue Danube (it is usually coffee-colored) drops its load of mud and sand, gathered from eight nations, in a large delta at the western end of the Black Sea. This delta takes the form of a huge, triangular fan 50 miles long on each side. The Sulina branch is used for navigation because its channel is kept clear by the European Commission of the Danube.

The Danube has been officially open to ships of all nations since the forming of the Danube Commission in 1856, and the various states in its basin have co-operated to improve its navigation facilities. Under a provision of the Treaty of Versailles, the Danube was completely internationalized. A new Danube Commission was organized, given diplomatic privileges, a police force, and its own flag.

Note: See also "Danube, Highway of Races," *National Geographic Magazine*, December, 1929. The headwaters of the Danube and the thrilling sport of "Faltboating" are described in "Adventurous Voyages to Medieval Towns," March, 1932. In the near future the *National Geographic Magazine* will publish new photographs and descriptions of Hungary and its fascinating capital, Budapest.

Bulletin No. 1, April 18, 1932.

© *Photograph by Osterreichische Lichtbildstelle*

MEMORIES OF RICHARD, THE LION HEARTED, AND THE THIRD CRUSADE

In this Austrian stronghold, at Dürnstein, overlooking the Danube, the great English king was held a prisoner for more than a year by Duke Leopold VI, who captured him as he was returning to his own country, by way of the Danube, after the Third Crusade to the Holy Lands.

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Crabs—Sponge, Green, Peeler, Buster, Soft Shell, Buckram and Hard Shell

ONCE crabs in Chesapeake Bay were so scarce that laws were passed by the States of Maryland and Virginia to protect egg-bearing female crabs. Now the State of Virginia is considering the repeal of its legislation, claiming that crabs are becoming too plentiful.

When the dredging and tonging for oysters ends in the Chesapeake region, the pursuit of the elusive crab begins.

Female Travels, the Male Stays at Home

At spawning time the female crabs make their way down Chesapeake Bay, to be near the briny waters of the ocean when producing their eggs, which are carried about on the mother crab in a spongelike mass about a third as large as the crab itself. In this stage the crustaceans are known as "sponge" crabs. There may be as many as two million eggs in one of these masses!

When the baby crab hatches, it is no more like an adult crab than a wiggle-tail is like an adult mosquito, and much less like one than a tadpole is like a frog.

In this form it is known as a zoëa, and looks not unlike a mosquito larva. It molts, or sheds its shell, six times, and then is a megalops, with a sharp-pointed nose, big eyes, legs like a crab, and a tail like a crawfish. The megalops, in its turn, undergoes a number of molts, and finally, after a month has elapsed from the day it hatches, changes into a tiny crab about one-eighth of an inch wide.

Thereupon it is ready to leave the salt water of the Virginia capes area and begins a slow pilgrimage northward; for the grassy bottoms of Tangier Sound and of the tidal rivers up the Bay are calling it.

Born in June and July, becoming full-fledged tiny crabs a month later, they molt, or doff, their outgrown shells about twice a month, and by the following February they are fair-sized crabs.

How the Crab Changes Its Clothes

When the water gets cold they go to the bottom and stay there until the warmth of spring calls them back. If allowed to live, they grow to maturity about July or August. Then they mate, and the female treks back to the Virginia capes to spawn, while the male remains in Maryland waters.

When the crab gets too big for its shell, it begins to cast it off—a process that requires from five days to a week. At first a black line, succeeded in two days by a white one, appears around the two outer segments of the swimming legs. It is now, in the parlance of the Bay, a "green" crab.

A little later the white lines turn red, a set of fine wrinkles appears between the wrist and upper arm of the claw, and it becomes, in crabman terms, a "peeler."

Then the upper shell is lifted and the crab slowly pushes itself out of its old suit, first through the back, and then through the front, above its eyes. In this stage the initiated call it a "buster."

Finally it wrenches its legs out of the old shell and frees itself entirely from its old clothes. It is then a "soft shell" and, if caught in this stage, is the favorite of all crabs.

But in a day's time it will develop a new shell. This process taxes its resources, and it becomes so poor and thin as to be worthless. In this stage it is called a

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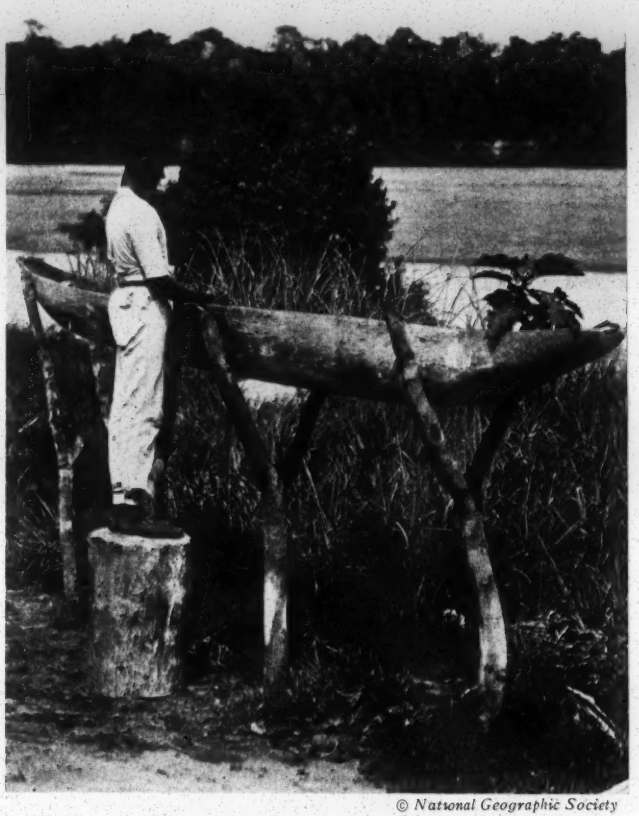
the overflow from the Orinoco cut a tortuous channel that in time became permanent.

Another fallacy exploded by Mr. Holt's party is that an alligator can be killed only by a shot through its eye. With a modern rifle Mr. Holt made a hole big enough for a man's fist in the armored side of a 10-foot cayman (as the alligators of South America are called), killing it with one discharge, and bringing it back as a museum specimen. The terrible 25-foot alligators described by early explorers doubtless existed only in the imagination of their native helpers.

More than a thousand bird skins, including specimens of the Cock-of-the-Rock, a flame-colored songster called "the most beautiful bird in the world," were obtained by the expedition. These skins, along with birds' eggs, mammal skins, and reptile and insect specimens, were presented by the National Geographic Society to the National Museum, in Washington.

Note: For the story of Ernest G. Holt's first expedition in South America see "In Humboldt's Wake," *National Geographic Magazine*, November, 1931. See also "Through Brazil to the Summit of Mt. Roraima, November, 1930; and "Exploring the Valley of the Amazon in a Hydroplane," April, 1926.

Bulletin No. 2, April 18, 1932.



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"HANGING GARDENS" OF THE ORINOCO

Because swarms of ants destroy gardens, and pigs and chickens are allowed to roam everywhere, the natives of this part of Venezuela grow all tender vegetables in boxes set well above the ground. Old dugout canoes, such as that shown above, are in demand.

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British North Borneo, Where "Wild Men" Have Been Tamed

TEN youthful Oxford students, seeking adventures, are on their way into the wilds of the Island of Borneo, in the East Indies. None of the members of the party is over thirty years of age. They will study animal life and collect rare plants in British North Borneo and in Sarawak, two divisions of the vast island under English rule.

British North Borneo is no longer the land of the "Wild man from Borneo." Before the English took possession of this part of the world's third largest island, young native tribesmen proved their manhood by hanging heads of enemies in their huts. But head-hunting now is a thing of the past.

Passable Roads Are Rare

A tangled mass of lofty, wooded mountains range from 4,000 to more than 13,000 feet, deep valleys furrow the interior, and wide areas of alluvial flats lie along the 800-mile seacoast. The area thrusts itself from the wild, jungle-clad border of Dutch Borneo toward the Philippine Islands.

There are only about 100 miles of modern improved roads in North Borneo, which covers an area the size of Ireland. Yet North Borneo is only an eighth of the huge island. There are less than 150 miles of railroads, but there are numerous rivers, many navigable for more than a hundred miles by the shallow-draft native boats.

North Borneo trade amounts to about $11,000,000 annually. The Chinese who control a greater portion of the trade send natives into the jungle to collect commodities ranging from lumber to armadillo hides.

Forests of the alluvial coastal flats yield bark of a small mangrove tree from which tannic acid is derived. Gutta percha, insulator for electrical devices; damar (gum or resin), which is widely used in the manufacture of paints and varnishes, wood oils, and incense woods which give off a sweet odor when burning, are important products of the interior forests. Numerous species of fish, seed pearls, shells, clams, turtles and oysters, and bêche-de-mer, a sea slug from which the Chinese make a delectable soup, are procured off the coast by native fishermen.

Until the eighties, North Borneo's trade was negligible. In 1882 some rubber plants reached the island from Brazil by way of London and Ceylon. In 1928 rubber plantations covered nearly 100,000 acres and produced more than 15,000,000 pounds of rubber for export. The next year foreign tobacco plants were tried out, and new tobacco plantations are springing up in North Borneo clearings. Palm trees from Africa are successfully grown, and the area may become a source of the palm oil, widely used in soap, candle and substitute butter manufacturing in Europe and the United States.

Chinese Are Business Leaders

Growing of manila hemp, sisal, coconut, rice and tropical fruit employs native labor. Many plantations are owned by white men. Small quantities of sugar and coffee are produced. Before rubber became a major crop, coffee was one of the leading North Borneo products.

North Borneo has a quarter million inhabitants. Only some 400 of them are Europeans. Chinese are the business leaders of the country, and in each of the larger villages and towns the Chinese bazaars are the centers of trade.

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"buckram." If allowed to remain in the water a little longer, however, it will get fat again.

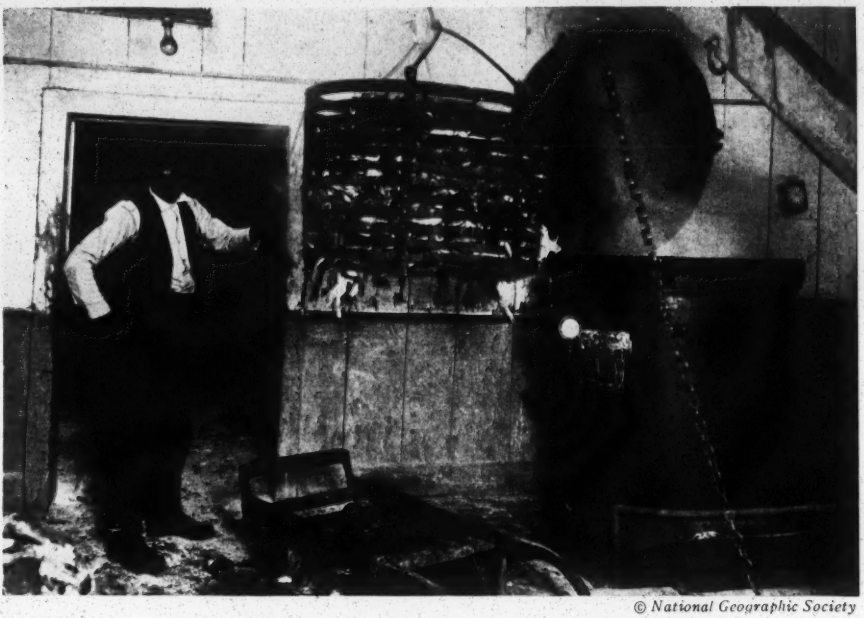
The hard-shell crabs are voracious and are easily taken with baited lines. The soft-shelled ones hide in the swamp grass and sand and take no food. They are captured by hand scoop nets or scrapers.

At home alike in water fresh enough to drink and that as salt as the open sea, the crabs make their way into all the creeks and inlets of tidewater. In many places they are so numerous that there is no market for them, and one often sees the shore strewn with thousands of them shaken out of the fishermen's seines and left either to die or find their way back to the water, as chance operates against or for them.

In southern Chesapeake waters, indeed, the fishermen in the estuaries often trample them to death in order to keep them from clogging the seines. After hard storms one frequently sees them washed high and dry on the beach in veritable windrows.

Note: Students studying crabs should consult: "Crabs and Crablike Curiosities of the Sea," *National Geographic Magazine*, July, 1928; and "A Maryland Pilgrimage," February, 1927. For supplementary reading about other life in the realm of water see: "The Book of Fishes," by Dr. John Oliver La Gorce and other authorities, published by the National Geographic Society. A complete list of the publications of The Society will be sent to teachers upon request.

Bulletin No. 3, April 18, 1932.



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HARD-SHELL CRABS COMING OUT OF THE STEAM KETTLE

The cagelike container holds the freshly cooked crabs, which will be allowed to cool for a short time in a near-by room. Then the white meat will be canned and sent to the markets of Baltimore, Washington, Philadelphia and other large cities. This factory is in Crisfield, on Maryland's Eastern Shore, center of the crabbing industry of Chesapeake Bay.

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Léon and Granada, Ancient Rivals for Nicaragua's Capital

MANAGUA, capital of Nicaragua, which a little over a year ago was almost leveled by a disastrous earthquake, is emerging slowly from its ruins. New buildings of reinforced concrete and timber are being constructed to replace the adobe and stone structures which cost so many lives during the tremors of March 31, 1931. The work is being delayed by lack of public and private funds.

Rebuilding of the city has ended talk of moving the capital to either Léon or to Granada, two near-by cities, which emerged as possible successors to Managua when it was feared that Managua was too far gone for salvage. Léon and Granada have profited, however, by Managua's misfortune, still retaining many former residents of the capital, who fled as refugees to the two cities.

Managua Chosen by an American

Léon and Granada are centuries-old rivals for the distinction of being Nicaragua's capital. Each city was founded in 1523, and in the succeeding two and a half centuries the seat of government alternated between them. Finally in 1858 a filibustering expedition under William Walker, an American, united the factions which had been fighting to have either Léon or Granada made the permanent capital. Walker's invasion forced the two groups together, and Managua, an insignificant village, was made the compromise capital. The sole reason for the selection of Managua was that it was midway between the two rival towns.

Léon has been second in population in Nicaragua since Managua's rise to power. Located on the railroad that connects Managua and Granada with Corinto, the country's principal seaport, Léon has enjoyed a consistent flow of trade and has become one of the commercial centers of Central America. In the fertile mountain country surrounding Léon, corn, sugar cane, cattle and dairy products are the principal sources of wealth.

The town itself is typical of many small cities in Latin America. Low houses of adobe, covered with red tiles, line the cobblestone streets. Léon's cathedral, started in 1610, is one of the showplaces of Nicaragua. The city shows the effects of numerous revolutions, but its plaza is still one of the handsomest in the country.

Léon's factories include a large soap works, which is said to supply 80 per cent of the laundry soap used on the west coast, a candle factory, two bottling works, three tanneries, and a water-power electric light plant.

Granada Sacked by Pirates

Granada, the oldest by a few months, and perhaps the wealthiest city in Nicaragua, was founded by Francisco Fernández de Córdoba in 1523 as an inland port at the western end of Lake Nicaragua. During Spanish colonial days, boats from the Caribbean Sea came up the San Juan River and across Lake Nicaragua directly to the docks of Granada. While this water route made Granada an important trading center, it also left it a target for early pirate attacks, and it was several times sacked, but always rebuilt.

Granada is the terminus of the Pacific Railroad, which connects the city with Managua, Léon, and Corinto, a distance of 171 miles. The railroad operates a small steamer on Lake Nicaragua (see illustration on next page), connecting Granada twice a week with the other towns on the lake.

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ALL TATTOOED UP AND NO PLACE TO GO

This Dayak is more of a dandy than the "wild man" we usually think of when Borneo is mentioned. He wears on each leg five silver rings and many small rings braided from the fiber of a palm; he has a fine bead necklace with silver buttons; his head is crowned with an elaborate millinery creation, in which is thrust a hornbill feather. Silver bracelets and a parang, or short sword, with a beautifully carved handle, complete his regalia.

Granada's principal trade is in coffee, sugar cane, cattle and dairy products. It is the smallest of the three principal cities, having only 22,000 population. Granada has always supported the so-called "conservative" ideas in government, while Léon has favored the "liberal" side.

Note: See also "Nicaragua, Largest of Central American Republics," *National Geographic Magazine*, March, 1927. For other references and pictures see "Buenos Aires to Washington by Horse," February, 1929; "To Bogotá and Back by Air," May, 1928; and "How Latin America Looks from the Air," October, 1927. A new article on Nicaragua, describing the route of the proposed Nicaraguan Canal, will appear in the May, 1932, issue of the *National Geographic Magazine*.

Bulletin No. 5, April 18, 1932.

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COWS DO NOT LIKE TO TRAVEL IN NICARAGUA

An unwilling passenger from the Chontales stock-raising country goes aboard a boat for Granada, on Lake Nicaragua. Nicaragua has fine prospects as a meat-producing nation, but most of its cattle to-day roam in a half-wild state over fenceless country.

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